

5.5 UNITE IO Server

5.5.1 Introduction

The eWON RS485 link can be configured as an UNITELWAY SLAVE INTERFACE. When the BaudRate in the UNITE IO Server is set to a value different than "Disabled", the Unitelway slave module in the eWON will be enabled.

This Unitelway slave provides 2 features:

- **Poll items in a Unitelway capable device.**

The device can be the Unitelway master itself or a device addressable through the Unitelway master on the XWay network.

- **Forward XIP requests from TCP/IP XIP to Unitelway bus and thus, act as a gateway between XIP and Unitelway.**

Using that feature, it is for example possible to access a PLC connected to the eWON's Unitelway link by connecting PL7PRO using the XIP driver started with the eWON IP address as destination.

5.5.2 Setup

5.5.2.1 Communication Setup

Figure 74: XWAY-UNITELWAY configuration

If more than one Serial port are available, you must choose on which COM the Unitelway request will be sent.

Baud Rate	Select the baud rate applying to your industrial network
Parity	The parity to apply: none / odd / even. This field is set by default to Odd, as in the main cases in a typical UniTE topology. However, eWON allows you to define a different parity type (Even or None), in case this is needful to comply with your industrial network installations.
Stop Bit(s)	Number of stop bits
Master Response Timeout	Maximum time the eWON will wait for a valid message from the Unitelway master. This value can be critical for a correct operation, depending on the responsiveness of the master. A value of 1000 should be selected to guarantee correct operation.
Rx message timeout (MSEC)	Maximum time between a request is posted and the response is received
Tx message timeout (MSEC)	Maximum time for a request to be sent
Force UnitelWay V2	If checked, the eWON will initiate communication in V2 with the devices. When used with a TSX PLC, this check box can be left unchecked.
ADO	Link address base. EWON will respond to AD0 and AD0+1 on the Unitelway link. The eWON will act as an Unitelway slave, it will respond to 2 consecutive link addresses AD0 and AD0+1, doing this improves the throughput of data across the eWON when acting as a gateway.
Xway Network Station	Address of the eWON on the XWAY network. When acting as an XIP to Unitelway gateway, the eWON will only respond the XWay network station defined here. Any XIP frame addressed to another network station will be ignored.

Table 65: XWAY communication setup controls

Important: When there are multiple IO servers potentially using the serial line, the unused IO server must select "DISABLED" for the unused IO server baudrate.

Example: if Modbus and UniTE IO servers are available, at least one of them must have the baudrate configured to "Disabled". If not, one of the IO servers will not be able to use the serial line and it will be disabled, with an error written in the event log.

5.5.2.2 Topic configuration

Topic A : <input checked="" type="checkbox"/> Enabled		
Topic Name:	A	
Global Slave Address:	<input type="text" value="0,254,0"/>	(Network,Station,Gate[,Module,Channel]) 0,254,0 is default
Poll Rate	<input type="text" value="2000"/> M5	Default: 2000
Topic B : <input type="checkbox"/> Enabled		
Topic Name:	B	
Global Slave Address:	<input type="text"/>	(Network,Station,Gate[,Module,Channel]) 0,254,0 is default
Poll Rate	<input type="text"/> M5	Default: 2000
Topic C : <input type="checkbox"/> Enabled		
Topic Name:	C	
Global Slave Address:	<input type="text"/>	(Network,Station,Gate[,Module,Channel]) 0,254,0 is default
Poll Rate	<input type="text"/> M5	Default: 2000

Figure 75: XWAY-UNITELWAY topics configuration

Three topics can be used for the IO Server. These topics are used to give a common property to a group of UNITE Tags such as:

- **Enable/Disable**
- **Poll rate**
- **Global Slave address**

Topic configuration item	Description
Topic enabled	Enables or disable polling of al the Tags in the topic.
Global Slave Address	This Slave address is a global parameter for all the Tags of the topic. See below for the Device Address syntax. If an address is specified here, it will replace (overload) the address defined Tag by Tag.
Poll rate	Defines the refresh rate of the Tag name. In a complex application, we can imagine that some Tag name must be refreshed every second – typically for digital input - and other every minute – typically: temperature-.

Table 66: UNITE - topics configuration

5.5.3 Tag name convention

IO Server configuration		
IO Server Name	UNITE	
Topic Name	A	
	B	
	C	
Item Name	ValueName,Network,Station,Gate,Module,Channel	PLC Address is defined Tag by Tag (and the gate requires a 5 level addressing)
	ValueName,Network,Station,Gate	PLC Address is defined Tag by Tag
	ValueName	Topic PLC Address is used

Table 67: UNITE - IO server configuration

The Item Name can contain the PLC address where the value is polled, or not. If address is also specified at topic level, the address specified at Tag level will be ignored. If Topic address is not defined either, then address 0,254,0 will be used.

5.5.3.1 Value Name

Value name follows the syntax below:

MWxW	Internal data word 16 bits (unsigned)
MWxI	Internal data word 16 bits (signed)
MWxD	Internal data word 32 bits as DWORD (unsigned) (*)
MWxF	Internal data word 32 bits as IEEE float
MWxL	Internal data word 32 bits as LONG (signed) (*)
SWxW	System data word 16 bits (unsigned)
SWxI	System data word 16 bits (signed)
SWxD	System data word 32 bits as DWORD (unsigned) (*)
SWxL	System data word 32 bits as LONG (signed) (*)
Mx	Internal data bit
Sx	System data bit

Table 68: value names for UNITE addresses

(*) Important: See “Tags are stored as Float” on page 62

Notes:

SW type cannot be formatted as float

eWON allows you to optimize the requests in case you need to read a lot of Tags that have been created on the UniTelWay device. Imagine you have 100 Tags to read, eWON will group the Tags within a predefined limit in order to make the less as reading operations as possible. The number of Tags that can be read depends of the types of words or bits that have to be read:

SW and MW types: by groups of 50

S and M types: by groups of 200

It is possible to read one bit from a word. The syntax to add is as follows:

#0 to #31

That means, if you want to read the fourth bit from an internal data word 16 bits unsigned that you address MW0, you have to add "#4" at the end of the address: MW0#4.

The type of words for which this syntax can be applied are:

MWxW, MWxI, MWxD, MWxL, SWxW, SWxI, SWxD and SWxL (please report to the table above).

• Status register:

The STATUS Tag is a special Tag that returns information about the current state of the communication for a given device. As for other Tags, the status Tag ValueName is composed of:

Status, Global Device Address

- You can define a status Tag for each PLC used.
- If you use the status address, the Tag must be configured as analog.

0	Communication not initialized. Status UNKNOWN. If no Tag is polled on that device address, the communication status is unknown.
1	Communication OK.
2	Communication NOT OK.

Table 69: Tag Status meaning

5.5.3.2 *The device address syntax*

The Device Address is used in the topic definition or in the Tag definition. If used in the Tag definition, it will be separated from the value name by a coma (',')

- **Network,Station,Gate**

or

- **Network,Station,Gate,Module,Channel**

The second case applies to addresses with 5 levels:

- **Network: 0..127**

- **Station: 0..63**

- **Gate:**

- **Module:**

- **Channel:**

Module and channel can be omitted if not required.

If address is not specified, 0,254,0 will be used.

Important: If an address is specified in a Topic definition it will replace any address defined Tag by Tag.